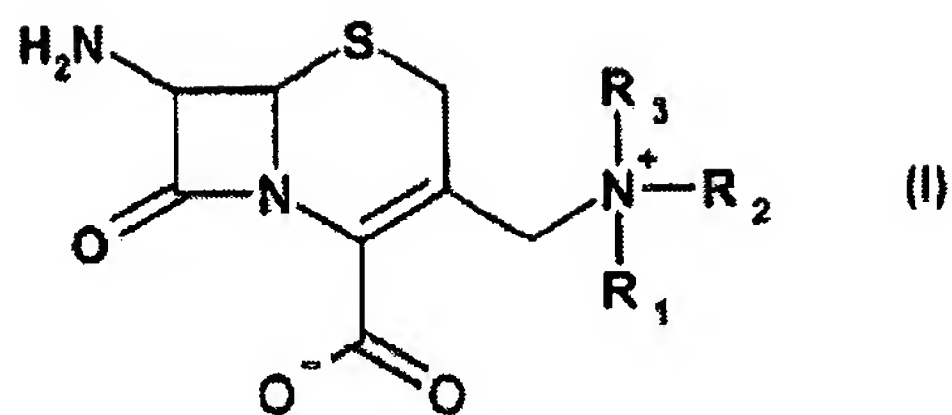


## Abstract



The invention relates to a new process for the production of intermediates for the synthesis of cephalosporin of formula (I) wherein  $R_1$ ,  $R_2$  and  $R_3$ , independently of one another, are alkyl, alkenyl, aryl, hydroxy( $C_{1-6}$ )alkyl, carbamoyl-( $C_{1-6}$ )alkyl, amino-( $C_{1-6}$ )alkyl, acylamino-( $C_{1-6}$ )alkyl or carboxy( $C_{1-6}$ )alkyl, or wherein  $R_2$  and  $R_3$  together with the adjacent nitrogen atom, form an alicyclic 5- to 8-membered heterocyclic ring, and  $R_1$  signifies alkyl, alkenyl or aryl. The process according to the invention is notable in that the formation of undesired by-products, especially  $\Delta^2$ -analogous compounds of formula (I), is greatly reduced.